

Subject card

Subject name and code	Fundamentals of Radiochemistry, PG_00188314						
Field of study	Podstawy radiochemii (Ćw.laboratoryjne)						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2027/2028		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		2.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Laboratory of Toxicology and Radiation Protection -> Department of Environmental Chemistry and Radiochemistry -> Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Dagmara Strumińska-Parulska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	0.0	0.0	30
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	30		5.0		15.0	50
Subject objectives	familiarizing students with all the issues mentioned in the program content						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[AKRL3_W01] The graduate knows and understands, at an advanced level, the laws and theories in the field of chemistry, as well as the basics of biology, mathematics and law constituting general knowledge in the scientific disciplines forming the theoretical foundations relevant to the study program.		1. knows and understands basic concepts related to ionizing radiation, radiochemistry, and radiotoxicity, 2. knows measurement methods using ionizing radiation, 3. knows the assumptions of nuclear forensics		[SW3] opracowanie tekstowe/praca pisemna		
	[AKRL3_U01] The graduate is able to identify, analyse and solve complex research problems in chemistry and forensic science by selecting appropriate methods and information sources.		1. can analyze radiographic images, 2. can perform measurements with a gamma spectrometer and indicate Cs-137 contamination, 3. can determine the content of natural isotopes in food and radioactive contamination		[SU6] demonstracja umiejętności praktycznych [SU8] obserwacja samodzielnej lub zespołowej pracy studenta		
	[AKRL3_K05] The graduate is ready to promote science and raise social awareness in the field of forensic analytics.		1. Understands the need for further education in the use of ionizing radiation in forensic analysis 2. Provides public awareness of the sources of radiochemical contamination 3. Understands the need to prevent the smuggling of nuclear materials		[SK1] wypowiedź ustna/rozmowa/dyskusja		

Subject contents	Gamma radiation detection - dosimeters, qualitative and quantitative analysis. Gamma spectrometry - measurement of natural and artificial isotopes in food. Analysis of fission product content - nuclear forensics. Analysis of radiographic images - X-ray imaging.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	observation of work in classes	51.0%	20.0%
	written work	51.0%	80.0%
Recommended reading	Basic literature	Olszewski G., Strumińska-Parulska D., Guide to laboratory exercises in nuclear chemistry, radiochemistry, and monitoring of radioactive pollution, 2024	
	Supplementary literature	-	
	eResources addresses		
Example issues/ example questions/ tasks being completed	-		
Work placement	Not applicable		

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